What is Claimed is:

1. Antenna array comprised of individual antennas for increasing the directional resolution and angular coverage, in the sense of monopulse-antenna, of which the total antenna mean radiation pattern or directional characteristic is characterized by a sum diagram and a differential diagram,

wherein the individual antennas are connected via a network of phase-shifters or hybrid junctions,

wherein the antenna array includes a sum input for selecting the individual antennas, so that the antenna mean radiation pattern or directional characteristic exhibits a sum diagram, and

wherein the antenna array includes a differential input for selecting the individual antennas so that the antenna mean radiation pattern or directional characteristic exhibits a differential diagram,

thereby characterized, that at least one of the phase shifters or hybrid junctions of the network is switchable, so that the antenna mean radiation pattern or directional characteristic exhibits further differential diagrams by the resulting change of the phase behavior due the selection of the individual antennas.

2. Antenna array according to claim 1, thereby characterized, that the network, by means in which the individual antennas are connected with each other, is comprised of a 3dB four-grid hybrid junction, two three-grid power dividers **5**, a switch **6** for the alternating connection of the inputs and outputs of the antenna elements **8** and **9**, the antenna elements **7** through **10**, as well as the connecting lines between the components,

wherein the connecting line length between the antenna elements **7** through **10** and the inputs of the three-grid power dividers **5** are equal in length, in order to take in to consideration the switch **6**, and

wherein the inputs of the four-grid 3dB hybrid junction **4** are connected with the three-grid power divider **5** with and without a $\lambda/4$-detour line.

3. Antenna array according to claim 2, thereby characterized, that the double switch **6** is realized by two 3dB hybrid junctions **13** and **14**, two switches **15** driven in synchrony, and two circuit segments **16** and **17**, wherein the two circuit segments **16** and **17** differ in their length so that the length difference corresponds to an uneven multiple of the half wave length of the waves passing through the device, and wherein the two 3dB hybrid junctions **13** and **14** are switched in series, so that an output from hybrid junction **13** is directly coupled with the input from hybrid junction **14**, while a coupling of the other output from hybrid junction **13** and one of the two circuit segments **16** or **17** occurs via the switch **15**.

4. Antenna array according to one claims 2 or 3, thereby characterized, that the switch **16** can be a simple double switch, with which it is possible to switch between a circuit of length L and a circuit of length L + $\lambda/2$.

5. Antenna array according to claim 4, thereby characterized, that the switch **6** is a 3dB hybrid junction.

6. Antenna array according to one of claims 1 through 5, thereby characterized, that for increasing the directional resolution, in particular for confirming of higher resolution during directional determination, the antenna array is supplemented with an additional separate antenna element,

and that this antenna element is positioned with such a spacing, that in the calculated complete diagram of the antenna arrangement one of the two main lobes is totally or partially suppressed.

7. Process for operating an antenna array consisting of individual antennas in order to enhance the directional resolution and angular coverage, in the sense of monopulse antenna, of which the common antenna mean radiation pattern or directional characteristic is associated with a sum diagram and a differential diagram,

in which the individual antennas are connected with each other via a network of phase shifters or hybrid junctions,

in which the antenna mean radiation pattern or directional characteristic of the antenna arrays during selection via a sum input produces a sum diagram, and

in which the antenna mean radiation pattern or directional characteristic of the antenna array during selection via a differential input produces a differential diagram,

thereby characterized, that at least one of the phase shifter or hybrid junctions of the network is switched, such that the antenna mean radiation pattern or directional characteristic exhibits further differential diagrams due to the resulting change of the phase behavior upon the selection of the individual antennas.

8. Process according to claim 7, thereby characterized, that for determining the entry direction of a received signal the phase difference between the differential and the sum channel is evaluated according to the monopulse process.

9. Process according to claim 7 or 8, thereby characterized, that for determining the entry direction of a received signal the antenna elements are driven non-symmetrically, so that the antenna diagram is deformed, and that the thus received signal at the differential channel is compared with the signal as tapped or received at the sum channel or the differential channel with the symmetric antenna diagram.

10. Process according to claims 7 or 8, thereby characterized, that for determining the entry direction of a received signal, reference is further made to the signal of an antenna element which in the calculated complete diagram of the antenna device completely or partially suppresses one of the two main lobes.